

REMARKS/ARGUMENTS

Claims 1-10 and 12-24 are present in the application. Claims 1-9 were amended. No claims were added or newly canceled. Claims 10 and 12-24 stand withdrawn from consideration. Reconsideration of the claims is respectfully requested in view of the above amendments and the following comments.

I. Objection to Claims

The Examiner has objected to claims 5-7, stating as follows:

Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The amendment to claim 1, disclosing a "T-shaped insert" is the same insert as being claimed in claim 5.

Claims 6 and 7 are objected to because of the following informalities: The dependencies of claims 6-7 should be changed from "according to claim 5" to --according to claim 1--.

Appropriate correction is required.

In response, claim 5 has been amended to further limit the subject matter of claim 1, and claims 6 and 7 have been amended to depend from claim 1.

Therefore, the objections to claims 5-7 have been overcome.

II. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claim 1 under 35 U.S.C. § 103 as being unpatentable over Weeks, U.S. Patent No. 6,720,058 (hereinafter "Weeks") in view of Hreha, U.S. Patent No. 4,077,290 (hereinafter "Hreha"). This rejection is respectfully traversed.

In rejecting the claim, the Examiner states:

Weeks discloses an anvil (mandrel 472; Figure 19) for providing support to a backed ply material (yarn) during a cutting operation by an ultrasonic blade, the backed ply material in a first direction, the ultrasonic blade having a cutting profile, the ultrasonic blade being operable to travel along a path, the path being orientated in a transverse manner relative to the first direction, the anvil

comprising: a rigid base (472) for securing the anvil to the cutting assembly; a channel (not shown; corresponding to the inserts also not shown; see col. 27, lines 25-28) in the rigid base and coinciding with the path; an insert (also, not shown; see col. 27, lines 25-28) to mate with the channel; a surface on the insert to support the backed ply material, the surface being secured to the base; and a groove (guide groove) disposed upon the surface and coinciding with the path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during butt cutting operations, slit cutting operations, and taper cutting operations, wherein a backing of the backed ply material is urged into the groove during the cutting operation (see col. 27-lines 1-31). Weeks does not disclose that the inserts and channels are an inverted T-shape. However, attention is directed to Hreha that discloses another insert possessing an inverted T-shape that mates with a corresponding inverted -T shaped channel. Hreha discloses that providing inserts of a variety of shapes (see at least Figure 2 and 7) is well known in the art as they allow the insert to be removably secured within the channel. T-shaped inserts unlike rectangular inserts hinder the movement of the insert in the forward direction. It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the inserts of Weeks to comprise a T-shape as taught by Hera as T-shaped inserts are old and well known in the art for improvements in more secure, yet detachable connections.

Office Action dated December 5, 2008, pages 3-4.

Claim 1 is as follows:

1. An anvil for providing support to a backed ply material during a cutting operation by an ultrasonic blade, the backed ply material traveling in a first direction, the ultrasonic blade having a cutting profile, the ultrasonic blade being operable to travel along a cutting path, the cutting path being oriented in a transverse manner relative to the first direction, the anvil comprising:
 - a rigid base for securing the anvil to a cutting assembly;
 - an inverted "T" shaped channel in the rigid base and coinciding with the cutting path;
 - a "T" shaped insert to mate with the channel;
 - a surface on the insert to support the backed ply material, the surface being secured to the base; and
 - a groove disposed upon the surface and coinciding with the cutting path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during the cutting operation, wherein a backing of the backed ply material is urged into the groove during the cutting operation.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are... determined; differences between the prior art and the claims at issue are... ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). "*Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.* *Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006))."

In the present case, the Office Action does not establish a *prima facie* case of obviousness because neither Weeks nor Hreha nor their combination teaches or suggests all the claim limitations recited in claim 1. For example, neither Weeks nor Hreha nor their combination teaches or suggests the features of "a rigid base for securing the anvil to a cutting assembly", "an inverted "T" shaped channel in the rigid base and coinciding with the cutting path", "a "T" shaped insert to mate with the channel", "a surface on the insert to support the backed ply material, the surface being secured to the base", or "a groove disposed upon the surface and coinciding with the cutting path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during the cutting operation, wherein a backing of the backed ply material is urged into the groove during the cutting operation."

Weeks is directed to a mechanism for forming a velour-like pile article, referred to as "tuftstring" that can be used for automotive carpet, mats or door panels (see col. 2, lines 51-55 of Weeks). Figure 19 of Weeks, referred to by the Examiner in rejecting claim 1, illustrates an embodiment of a tuftstring bonding device, and is reproduced below for the convenience of the Examiner:

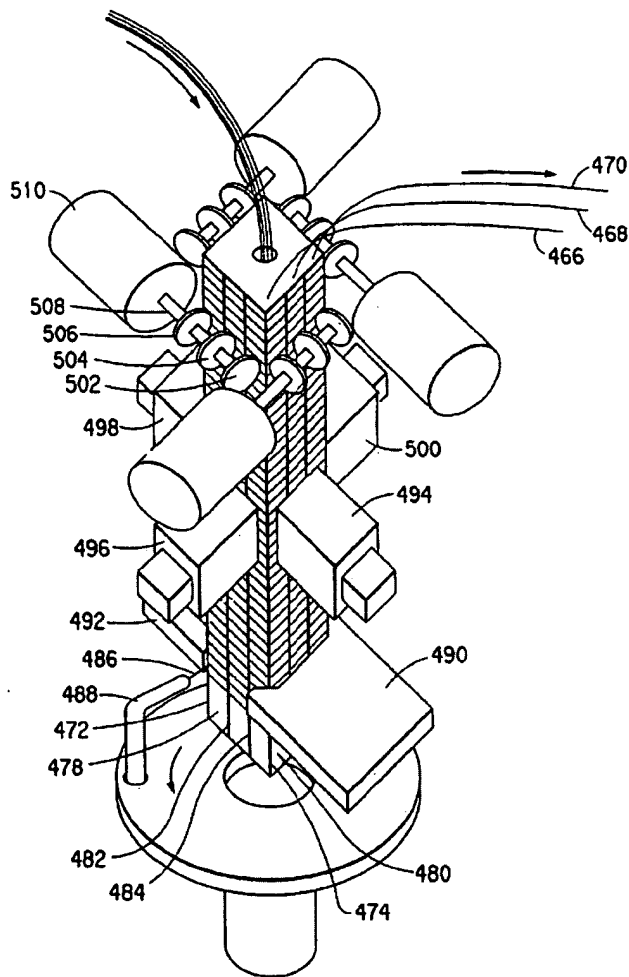


FIG. 19

Weeks, Figure 19.

In rejecting claim 1, the Examiner construes mandrel 472 in Figure 19 of Weeks as corresponding to the anvil recited in claim 1, and the yarn 486 which is wrapped around mandrel 472, as corresponding to the backed ply material of the claim.

Assuming *arguendo* that mandrel 472 can be construed as an anvil and that yarn 486 can be construed as backed ply material (although Applicants respectfully disagree that a strand of yarn is a backed ply material), Weeks still does not disclose or suggest “a rigid base for securing the anvil to a cutting assembly” as recited in claim 1.

Weeks illustrates four cutting mechanisms in Figure 19, each cutting mechanism having a plurality of cutting blades, for example, cutting blades 502, 504 and 506 on shaft 508. The cutting blades are driven to rotate by motors such as motor 10 (see col. 27, lines 31-34 of Weeks). The cutting blades in Weeks are not ultrasonic blades, and there is no disclosure or suggestion, either in Figure 19 or in its description in columns 27 and 28 that the cutting mechanisms are in any way secured to the mandrel 472. To the contrary, in Figure 19, the cutting mechanisms are not secured to the mandrel 472 in any way. Therefore, Weeks does not teach or suggest “a rigid base for securing the anvil to a cutting assembly” as recited in claim 1.

Weeks also does not teach or suggest “an inverted “T” shaped channel in the rigid base and coinciding with the cutting path” or “a “T” shaped insert to mate with the channel” as recited in claim 1. In rejecting the claim, the Examiner refers to col. 27, lines 25-28 of Weeks as disclosing the channel recited in claim 1 and the insert in the channel. This portion is reproduced below for the convenience of the Examiner:

There may be replaceable inserts (not shown) used for the groove portion directly under the horns so worn groove areas could be simply replaced without replacing the entire mandrel.

Weeks, column 27, lines 25-28.

As is clear from the above recitation, the groove portion and the inserts referred to in Weeks are under the horns, for example, under horns 494, 496 498 and 500 in Figure 19. The horns, however, are not cutting mechanisms, but function to bond support strands, such as strands 482 and 484 in Figure 19, to the yarn (see, for example, the description of the horns beginning at Col. 20, line 39). Weeks does not disclose or in any way suggest a T-shaped channel in mandrel 472 that coincides with a cutting path, and certainly does not disclose or suggest a “T” shaped insert to mate with such a channel” as recited in claim 1. The inserts referred to in Weeks are associated with the bonding horns and are unrelated to the cutting mechanisms in Weeks.

Therefore, Weeks also fails to teach or suggest “an inverted “T” shaped channel in the rigid base and coinciding with the cutting path” or a “T” shaped insert to mate with the channel” as recited in claim 1.

Yet further, because Weeks does not disclose or suggest an insert to mate with a channel that coincides with a cutting path, Weeks also cannot teach or suggest “a surface on the insert to support the backed ply material, the surface being secured to the base” or “a groove disposed upon the surface and coinciding with the cutting path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during the cutting operation, wherein a backing of the backed ply material is urged into the groove during the cutting operation” as recited in claim 1. For example, Weeks does not disclose a surface on an insert to support a backed ply material, or a groove upon the surface that coincides with a cutting path, or that has a groove that that has a curved profile that corresponds to a tip portion of the cutting profile. Weeks, in fact, does not disclose an ultrasonic blade having a cutting profile, but, instead, discloses rotating cutting blades driven by a motor.

Also, Weeks does not disclose or suggest “wherein a backing of the backed ply material is urged into the groove during the cutting operation” as recited in claim 1. In this regard, a feature of the present invention is that the groove provided on the surface of the insert functions as a relief to allow the ultrasonic blade to chisel through the backed ply material and provide a clearance for the blade tip and backing to “break through” the material as opposed to cutting against a hard un-yielding surface which may require substantial depth control of the blade tip. The groove allows a clearance or room for the backing to flex away from the material being cut during the cutting operation.

Hreha does not supply the above-described deficiencies in Weeks. Hreha is cited as disclosing inserts of various shapes for mating with a channel, and the Examiner asserts that it would have been obvious to use T-shaped inserts for the inserts disclosed in Weeks.

However, as pointed out above, any inserts that may be disclosed in Weeks are associated with the horns for bonding yarn to support strands. The inserts are not associated with a cutting mechanism and do not coincide with a cutting path. Therefore, even assuming *arguendo* that it would be obvious in view of Hreha to use T-shaped inserts in Weeks, Weeks in view of Hreha still does not teach or suggest any of the features of claim 1 as discussed in detail above.

For at least all the above reasons, claim 1 is not obvious over Weeks in view of Hreha and patentably distinguishes over the references in its present form.

Therefore, the rejection of claim 1 under 35 U.S.C. § 103 as being unpatentable over Weeks in view of Hreha has been overcome.

III. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 2-4 under 35 U.S.C. § 103 as being unpatentable over Weeks and Hreha, and in further view of Loose, U.S. Patent No. 3,683,736 (hereinafter "Loose"). This rejection is respectfully traversed.

In rejecting the claims, the Examiner states:

The modified device of Weeks discloses the claimed invention, but is silent as to the material of the base, 472. However, attention is directed to the Loose device that also discloses an anvil (11) utilized for ultrasonic perforation of film and paper material. Loose discloses (column 2, lines) that the anvil is made of a dense rigid material, such as steel or other metal to support photographic paper or film. It would have been obvious to form the anvil of metal as taught by Loose to ensure that the anvil is not damaged by the cutting action as taught by Loose.

In regards to claim 4, since the back rail, like the anvil, is also capable of supporting the backed ply material, for the previously expressed reason of ensuring that the back rail is not damaged by the cutting action, it also would have been obvious to one having ordinary skill in the art at the time of the invention to have made the back rail and consequently the grooved surface of the back rail, out of steel or other metal as taught by the teachings of Loose.

Additionally, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Office Action dated December 5, 2008, pages 4-5.

Claims 2-4 depend from and further restrict claim 1. Loose is cited as disclosing an anvil made of a dense rigid material such as steel or another metal. Loose does not, however, supply the deficiencies in Weeks in view of Hreha as described in detail above with respect to claim 1. Claims 2-4, accordingly, patentably distinguish over the cited references, at least by virtue of their dependency.

Therefore, the rejection of claims 2-4 under 35 U.S.C. § 103 has been overcome.

IV. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 7-9 under 35 U.S.C. § 103 as being unpatentable over Weeks and Hreha, and in further view of Greve et al., U.S. Patent No. 5,072,640 (hereinafter "Greve"). This rejection is respectfully traversed.

In rejecting the claims, the Examiner states:

The modified device of Weeks, does not disclose that the insert comprises nylon or DELRIN® (ultra high molecular weight polymers). However, attention is directed to the Greve device that discloses a cylindrical shaped anvil located substantially across the length of the conveyor belt module being cut such that it provides support to the modules along a line directly opposite the length of the blade as the blade cuts through the modules. Greve discloses that DELRIN® is a very suitable material for the anvil. DELRIN® yields slightly under pressure to provide some stress relief to the anvil by absorbing the impact energy from the cutter, thereby prolonging the life of the cutting surface. It would have been obvious to form the anvil of Weeks from DELRIN® to provide protection of the cutting surface and prolong its usable life as taught by Greve. As previously discussed, the back plate and thus the insert are also cutting surfaces capable of providing support to the material that is being cut by a cutting edge. Therefore, it also would have been obvious to form the back plate and thus the grooved insert from DELRIN® to provide protection of the cutting surface and prolong its usable life as taught by Greve. Additionally, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Office Action dated December 5, 2008, pages 5-6.

Claims 7-9 depend from and further restrict claim 1. Greve is cited as disclosing nylon or Delrin® anvils and the Examiner asserts that it would have been obvious to use such materials for the insert in Weeks in view of Hreha. Greve does not, however, supply the deficiencies in Weeks in view of Hreha as discussed in detail above with respect to claim 1. Claims 7-9, accordingly, patentably distinguish over the cited references, at least by virtue of their dependency

Therefore, the rejection of claims 7-9 under 35 U.S.C. § 103 has been overcome.

V. 35 U.S.C. § 102, Anticipation

The Examiner has rejected claim 1 under 35 U.S.C. § 102(e) as being anticipated by Carlson et al., U.S. Patent Application Publication No. 2004/0079208 (hereinafter “Carlson”). This rejection is respectfully traversed.

In rejecting the claim, the Examiner states:

Carlson discloses an anvil (base plate, 26) capable of providing support to a backed ply material cut by an ultrasonic blade (30), the backed ply material traveling in a first direction (along the longitudinal length of the base, 26), the ultrasonic blade having a tip, the ultrasonic blade being operable to travel along a path (122), and the path being oriented in a transverse manner relative to the first direction (page 5, paragraph 42). Carlson discloses the anvil comprising a rigid base (26) for securing the anvil to a cutting assembly, a surface coinciding with the path (the grooved portion of the base plate's back rail, 40), the surface being secured to the base (page 3, paragraph 24), and a groove disposed upon the surface (the grooved portion of the base plate's back rail, 40), the having a curved profile complimentary to the profile of the tip (shown in Figure 1).

Office Action dated December 5, 2008, pages 6-7.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). In this case each and every feature of the presently claimed invention is not identically shown in the Carlson, arranged as they are in claim 1, and, accordingly, Carlson does not anticipate claim 1. For example, Carlson does not disclose or suggest “a rigid base for securing the anvil to a cutting assembly”, “an inverted “T” shaped channel in the rigid base and coinciding with the cutting path”, “a “T” shaped insert to mate with the channel”, “a surface on the insert to support the backed ply material, the surface being secured to the base”, or “a groove disposed upon the surface and coinciding with the cutting path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during the cutting operation,

wherein a backing of the backed ply material is urged into the groove during the cutting operation” as recited in claim 1.

Carlson is directed to an ultrasonic cutting system that includes a protective sheet 28 between a base plate 26 and a material 18 to be cut by a cutting blade 30. In rejecting claim 1, the Examiner considers base plate 26 as corresponding to the anvil recited in the claim, and ultrasonic blade 30 as corresponding to a cutting tool to cut material 18. There is no disclosure or suggestion in Carlson, however, that base plate 26 includes a rigid base for securing the base plate to a cutting assembly. To the contrary, the figures in Carlson, particularly the side view illustrated in Figure 4 shows that the cutting assembly is attached to jig 20 and not to base plate 12 or to any structure supporting the base plate 12 (see paragraph [0034] of Carlson). Therefore, Carlson does not disclose or suggest “a rigid base for securing the anvil to a cutting assembly” as recited in claim 1, and does not anticipate claim 1 for this reason.

Carlson also does not disclose or suggest “an inverted "T" shaped channel in the rigid base and coinciding with the cutting path”, or “a "T" shaped insert to mate with the channel” as recited in claim 1. Carlson does not disclose an anvil having a channel of any kind that coincides with a cutting path.

As described, for example, in paragraph [0024] of Carlson, base plate 26 preferably has “a smooth planar surface” so as to support the protective sheet 28 and the material 18 being cut. As described in paragraph [0023] of Carlson, the protective sheet 28 is positioned between the base plate and the material 18 to be cut such that when the material is cut, the protective sheet will be partially cut such that the cutting blade will not contact the base plate.

As should be apparent from the above, there is no channel in the base plate of Carlson that coincides with a cutting path, and there is no insert of any kind within such a channel.

Therefore, Carlson does not disclose or suggest “an inverted "T" shaped channel in the rigid base and coinciding with the cutting path”, or “a "T" shaped insert to mate with the channel” as recited in claim 1, and does not anticipate claim 1 for this reason also.

Carlson also does not disclose or suggest “a surface on the insert to support the backed ply material, the surface being secured to the base”, or “a groove disposed upon the surface and coinciding with the cutting path, the groove having a curved profile corresponding to a tip portion of the cutting profile, the groove providing support during the cutting operation, wherein a backing of the backed ply material is urged into the groove during the cutting operation” as

recited in claim 1. As discussed above, Carlson does not disclose a T-shaped insert that mates with a T-shaped channel, and also does not disclose or suggest a groove on a surface of an insert that coincides with a cutting path. The unnumbered “groove” illustrated in Figure 1 of Carlson and referred to by the Examiner in rejecting claim 1 is in the back rail 40 and is behind the cutting path in Carlson (shown in dotted line) and does not coincide in any way with the cutting path or the material being cut. Further, because Carlson does not disclose a groove in an insert of an anvil that coincides with a cutting path (and, in fact, specifically teaches a base plate that has a smooth planar surface, Carlson also does not disclose that “a backing of the backed ply material is urged into the groove during the cutting operation” as recited in claim 1.

For at least all the above reasons, claim 1 is not anticipated by Carlson and patentably distinguishes over Carlson in its present form

Therefore, the rejection of claim 1 as being anticipated by Carlson has been overcome.

VI. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claim 1 under 35 U.S.C. § 103 as being unpatentable over Carlson in view of Manabe et al., U.S. Patent 5,480,508 (hereinafter “Manabe”) and in further view of Weeks and Hreha. This rejection is respectfully traversed.

In rejecting the claim, the Examiner states:

However, to the extent that it can be argued that the limitations of the preamble directed to the ultrasonic blade breathe life and breath to the claim and are therefore part of the claim limitations, it is noted that Carlson does not disclose that the ultrasonic blade has a curved profile. However, attention is directed to the Manabe discloses the use of a curved ultrasonic blade to cut a prepreg tape, and that the blade can be an assortment of shapes, corresponding to Figures 10(A)-10(E).. Manabe discloses that the different shapes are utilized for different cutting purposes (column 14, lines 14-31). For instance, the cutting blade, 655a, as similarly disclosed by Carlson is useful for cutting in one direction. However, the ultrasonic blades with curved profiles, 655b/655c, are used to cut while being reciprocated and to form circular openings. It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the cutting blade of Carlson to have a curved profile as taught by Manabe so that the cutting apparatus was versatile for a variety of applications as desired by the operator.

Additionally it is noted that as modified, the tip of Carlson would be complementary to the grooves curved profile, as the limitation “complementary” has been interpreted as meaning as “forming or serving as a complement;

offsetting mutual lacks" as defined by The American Heritage® Dictionary of the English Language: Fourth Edition. 2000. Therefore, Carlson as modified by Manabe discloses groove profile complimentary to the curved profile of the tip in as much the as the applicant's blade tip and groove profile complement each other.

Although it appears that the groove is a an insert situated between clamps 42 and 44 as viewed from Figure 1, Carlson does not positively identify the groove as a separate piece from the back rail and also does not disclose that it is formed of an invented T-shape that mates with an inverted T-shaped channel. However, attention is directed to the Weeks device that does disclose a groove situated under an ultrasonic tool, a horn, where its recognized that replaceable inserts can be used for the groove portion directly under the horn so that worn groove areas can be simply replaced without replacing the entire mandrel (base). It would have been obvious to one having ordinary skill in the art at the time of invention to have constructed the grooved section of back plate, 40, of Carlson between clamps 42 and 44, to be a removable insert (if not already), in view of the teachings of Weeks to be a separable and replaceable entity thereby inducing a cost and time savings if the part required replacement.

Although the modified device of Carlson discloses a removable insert with a groove, Weeks is silent as to the shape of the insert and therefore does not disclose that the insert is an inverted T shape. However, further attention is directed to Hreha that discloses another insert possessing an inverted T-shape that mates with a corresponding inverted -T shaped channel. Hreha discloses that providing inserts of a variety of shapes (see at least Figure 2 and 7) is well known in the art as they allow the insert to be removably secured within the channel. T-shaped inserts unlike rectangular inserts hinder the movement of the insert in the forward direction. It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the inserts of Carlson/Weeks to comprise a T-shape as taught by Hera as T-shaped inserts are old and well known in the art for improvements in more secure, yet detachable connections.

Office Action dated December 5, 2008, pages 6-9.

Manabe is cited as disclosing the use of a curved ultrasonic blade to cut a prepreg tape, and as disclosing a groove profile complimentary to the curved profile of the tip. However, as described in detail above, Carlson specifically teaches a base plate that has a smooth planar surface that is protected by a protective sheet during a cutting operation. The cutting blade in Carlson does not touch the base plate, and the base plate does not have a groove coincident with a cutting path or any need for such a groove. Therefore, it would not be obvious to include a groove profile in Carlson that is complementary to a profile of the tip of the cutting tool in Carlson.

The Examiner cites Weeks as disclosing a groove situated under an ultrasonic tool. However, as discussed above, the ultrasonic tool in Weeks is not a cutting tool, and providing a groove of any kind in the base plate of Carlson would be unnecessary since the cutting blade in Carlson does not touch the base plate and Carlson specifically teaches a base plate having a smooth planar surface.

Hreha is cited as disclosing an insert possessing an inverted T-shape that mates with a corresponding inverted -T shaped channel. However, as indicated above, Carlson does not disclose or suggest a channel of any kind in base plate 26, and certainly does not disclose providing an insert in a channel in the base plate. Carlson would have no need for an insert, in any event, since the base plate is protected by protective sheet 28.

In general, Carlson does not disclose or suggest many of the features recited in claim 1 as discussed in detail above, and the secondary references of Manabe, Weeks and Hreha, do not supply the deficiencies in Carlson.

Therefore, the rejection of claim 1 under 35 U.S.C. § 103 as being obvious over Carlson in view of Manabe, Weeks and Hreha has been overcome.

VII. Claims 5 and 6

It is noted that although the Office Action Summary Sheet indicates that claims 1-9 are rejected, claims 5 and 6 have not been rejected on any grounds in the body of the Office Action. Applicants, accordingly, are unable to specifically comment with respect to those claims, however, it is pointed out that those claims depend from and further restrict claim 1, and should be allowable in their present form, at least by virtue of their dependency.

VIII. Conclusion

For at least all the above reasons, claims 1-9 patentably distinguish over the cited art and this application is believed to be in condition for allowance. It is, accordingly, respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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